

## 2015 CDC HA-VTE PREVENTION CHALLENGE CHAMPION



### ORGANIZATION:

Harborview Medical Center (HMC) | Seattle, Washington

### PATIENT POPULATION:

- 17,121 inpatient admissions in 2014; 413 beds.
- 19% belong to a racial or ethnic minority.
- 37% are enrolled in Medicaid.

### BACKGROUND

Harborview Medical Center (HMC) is a 413-bed academic tertiary referral hospital and the only level 1 adult and pediatric trauma and burn center for a five-state area. HMC has centers of excellence in neurosciences, orthopedics, vascular surgery and rehabilitation.

At HMC, one-third of the 17,000 annual admissions are related to trauma. VTE remains the most common hospital-acquired condition at HMC, despite a high adherence rate to institutional guidelines of VTE prophylaxis. To eliminate potentially preventable HA-VTE, HMC employed a multifactorial strategy that included designated clinical leadership, active engagement of all care teams, decision support tools embedded in the electronic health record, quality improvement (QI) analytics, and retrospective and prospective reporting that provide ongoing measurement and analysis of the effectiveness of implemented interventions.

### OBJECTIVES

To improve the safety and care of all patients at HMC by performing the following

- Incorporating evidence-based best practices in VTE prevention and treatment into current practice;
- Standardizing the review process for all HA-VTE events to identify improvement opportunities;
- Utilizing QI strategies to improve processes at the point-of-care;
- Sharing VTE prevention process and outcome performance measures transparently across the institution.

### METHODS

- **HMC VTE Task Force.** The multi-disciplinary Task Force, co-chaired by a trauma surgeon and hospitalist, was formed in 2010 to assess VTE prevention practices across services, and to identify improvement opportunities for

all hospitalized patients. Task Force members include representatives from general surgery, orthopedic surgery, hospital medicine, nursing, pharmacy, and QI.

- **Monthly meetings to review performance data and develop improvement initiatives.** The HMC VTE Task Force collaborated with experts across their health system to update an existing institutional VTE prophylaxis guideline to reflect current evidence-based standards. The team reviews each HA-VTE event to identify potential opportunities for improvement
- **Developed an electronic tool for efficient, standardized review of all HA-VTE.** The tool uses natural language processing to identify cases, allowing the Task Force to quickly assess the accuracy of risk assessment and appropriateness of prophylaxis, providing timely feedback to providers on opportunities for improvement.

- **Developed tools to provide real-time, actionable information to clinicians at the bedside.** Daily electronic lists highlight patients who have not received chemical or mechanical prophylaxis in 24 hours. Patients who have received vitamin K antagonists are identified to support early patient/family education and ensure appropriate follow-up.
- **“VTE Prevention/Treatment Summary” data snapshot in the patient’s chart.** The same data will be embedded in resident physician and nursing handoff tools to enhance multidisciplinary communication at the bedside.
- **Creation of a Dashboard.** Process and outcome measures are provided to all physicians, staff, at the service and unit level on an internal web-based institutional dashboard. The dashboard strengthens the commitment to VTE prevention and ensures physician/staff engagement. QI analysts update data monthly. Improvement opportunities are highlighted in multiple venues.

## RESULTS

### HA-VTE Prevention:

- Since 2013, annual prophylaxis rates at HMC have exceeded 95% for acute care patients (VTE-1) and 97% for critical care (VTE-2).
- HMC has had zero potentially preventable VTE events (VTE-6), since the measure was implemented in January of 2013, both a national best practice and a top 10 performance measure among University HealthSystem Consortium academic medical centers.
- Improved VTE prophylaxis has contributed to a 15% reduction in HA-VTE over the past five years from a rate of 7.5 events/1000 inpatients in 2011 to 6.4/1000 inpatients for the first nine months of 2015.
- Among post-operative patients, the rate of VTE has decreased 21% from 11.7/1000 patients in CY2011 to 9.3/1000 patients in the first 9 months of 2015 (AHRQ PSI-12).

### Patients at high-risk for HA-VTE:

- Since the Task Force launch, the percent of patients diagnosed with HA-VTE who received guideline-directed prophylaxis has improved from 86% in 2012 to 100% during the most recent quarter of 2015.
- Clinical services involved in the care had staff review all HA-VTE events for possible improvement opportunities. The majority of cases were deemed not to have been preventable given the significant clinical complexity for patients with both high VTE risk and high bleeding risk. However, two potential opportunities – doses of prophylaxis that were not administered near the time of the procedure and patient refusal of doses – will be the focus of ongoing improvement initiatives.
- With targeted initiatives, 96% of patients with HA-VTE received written discharge instructions for warfarin use in 2015 compared with 91% in 2014 (VTE-5).
- Outpatient anticoagulation follow-up was arranged prior to hospital discharge for 97% of patients who were discharged home on warfarin after HA-VTE diagnosis.

## CONCLUSIONS

HMC VTE prevention strategy has resulted in improved guideline-directed VTE prophylaxis and decreased rates of HA-VTE.

Keys to success include:

- A multidisciplinary approach, clinical presence of Task Force members, support of senior clinical leadership and HMC's identification of VTE prevention as a high-level institutional goal.
- Institutional VTE prevention guidelines based on evidence-based national recommendations with integration into the EHR to drive practice standardization.
- Consistent use of QI analytics for retrospective review, real-time data feedback and point-of-care interventions coupled with complete transparency of performance at the service and unit level to support accountability.
- Ongoing Task Force collaboration with frontline providers and clinical departments and integration into existing QI and operational structures are critical to physician and staff engagement and sustained performance improvement.

The work of the VTE Task Force has led to safer patient care and represents the steadfast commitment of HMC to mitigate preventable harm. This same intervention strategy has served as a model for other hospital-based initiatives and could be implemented by other organizations that are undertaking improvement projects.